

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION
WATER QUANTITY DIVISION
DAM EVALUATION REPORT

GENERAL INFORMATION

INVENTORY NO. TX-3755 WATER RIGHT AUTHORIZATION A-2302 / P-2076

DAM Lake Charmaine Dam

OWNER Ivanhoe Property Owners Improvement Association (IPOIA)

STREAM Magnus Branch

BASIN Neches River COUNTY Tyler

GENERAL LOCATION 6.0 miles south of Woodville, Texas

DAM HEIGHT 28. FT. DOWNSTREAM HAZARD [REDACTED]

NORMAL CAPACITY 608. A.F. MAXIMUM CAPACITY 1920. A.F.

EVALUATION DATE January 28, 1998

PREVIOUS EVALUATION DATE June 2, 1993

NORMAL WATER LEVEL : 163.0-Foot Mean Sea Level (msl)
CURRENT WATER LEVEL: Empty. Dam breached

INSPECTION BY

Richard Dee Purkeypile, P.E., TNRCC Dam Safety Team
Bob Wucher, P. E., TNRCC Dam Safety Team

SUMMARY

Lake Charmaine Dam was overtopped and failed during the 1996 flood. The dam has not been rebuilt since that time and the lake remains empty.

BACKGROUND

The City of Woodville and the surrounding area, which includes Lake Charmaine Dam, experienced approximately 16 inches of rain in a 24-hour period on September 27, 1996. The Texas Forest Service office located in the City of Woodville, reported a peak intensity of 15-inches

Lake Charmaine Dam

January 28, 1998

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of rain in a 4-hour period. Ten dams in the Magnus Branch watershed overtopped and failed due to this intense storm event. Several other dams were damaged by erosion due to overtopping. Lake Charmaine Dam was overtopped and its spillway failed resulting in the loss of the lake.

CURRENT INSPECTION

Prior to the inspection, the inspectors were met at the IPOIA clubhouse by concerned residents who asked the inspectors questions regarding the dams in the subdivision. In particular, questions were asked regarding the hydraulic criteria for both Lake Charmaine Dam and Lake Galahad Dam. They want to rebuild both dams back to the original lake levels. The inspectors indicated that the owner's engineer would need to submit plans to this agency for review and approval prior to commencement of construction and that any engineering data that was in the files would be available to the owner's engineer.

During the inspection of the dam it was noted that the spillway had been completely washed out. The lake is empty and will remain so until the owners obtain the financial resources to rebuild the dam. The concrete structure reportedly overtopped and was undermined which resulted in the whole structure tipping over and breaking up as the flood wave pushed it downstream. The resulting breached spillway area is now essentially a 100-foot wide discharge channel for the creeks that flow into Lake Charmaine.

Flood flows were approximately three feet deep over the left abutment area. The IPOIA clubhouse was flooded along with many homes located along the left shoreline of the lake. The main embankment experienced approximately two to three feet of overtopping which resulted in significant erosion of the downstream slope. Many large trees were uprooted and toppled and an erosion scarp formed which varies from four to eight feet. Most of the downstream slope has been washed away. The owners have cleared some of the trees from the downstream slope and toe area in an effort to salvage salable timber and to begin removing the flood debris.

HAZARD CLASSIFICATION / HYDRAULIC REVIEW



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ATTACHMENTS

Included with this report are the following: photographs, a sketch of the dam showing photo locations, a topographic map, and a location map.

Richard Dee Purkeypile
Richard Dee Purkeypile, P. E.

6-5-98
Report Date

Bob Wucher, P. E.



Photo No.1: View of the destroyed concrete spillway. This channel is approximately 100-feet wide.



Photo No.2: This is a view of the remnants of the head wall for the concrete spillway. The previous photo is located to the left of this photo.



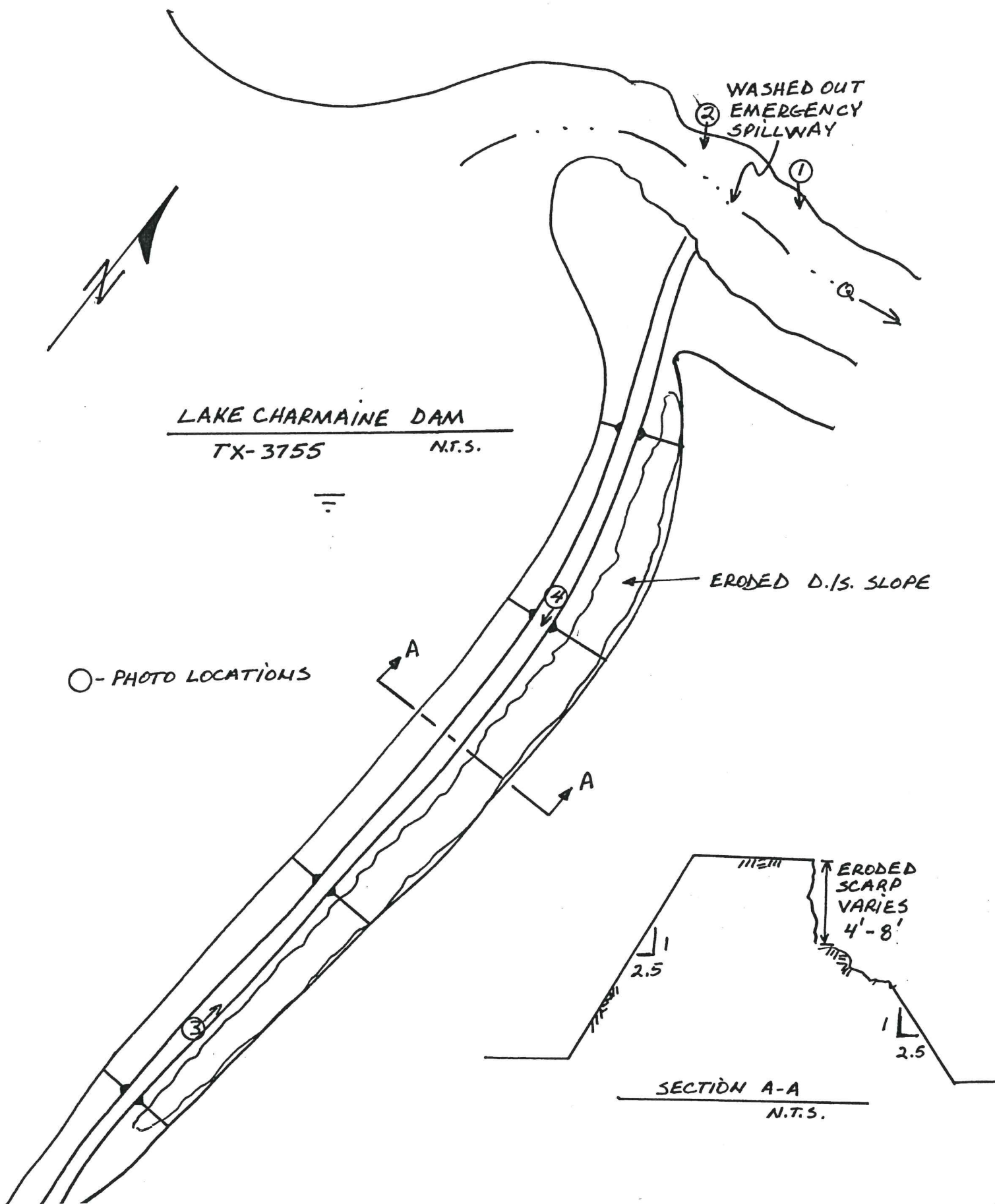
Photo No.3: View of the downstream slope of the embankment. Note that a good portion of the roadway has been destroyed and much material has been eroded from the downstream slope.



Photo No.4: This is a view of the damage that occurred to the downstream slope. Note that the erosion scarp is approximately eight feet high.



Photo No.5: This is a view of the downstream slope where trees were removed by the owners after the root balls had been exposed by erosion on the downstream slope.

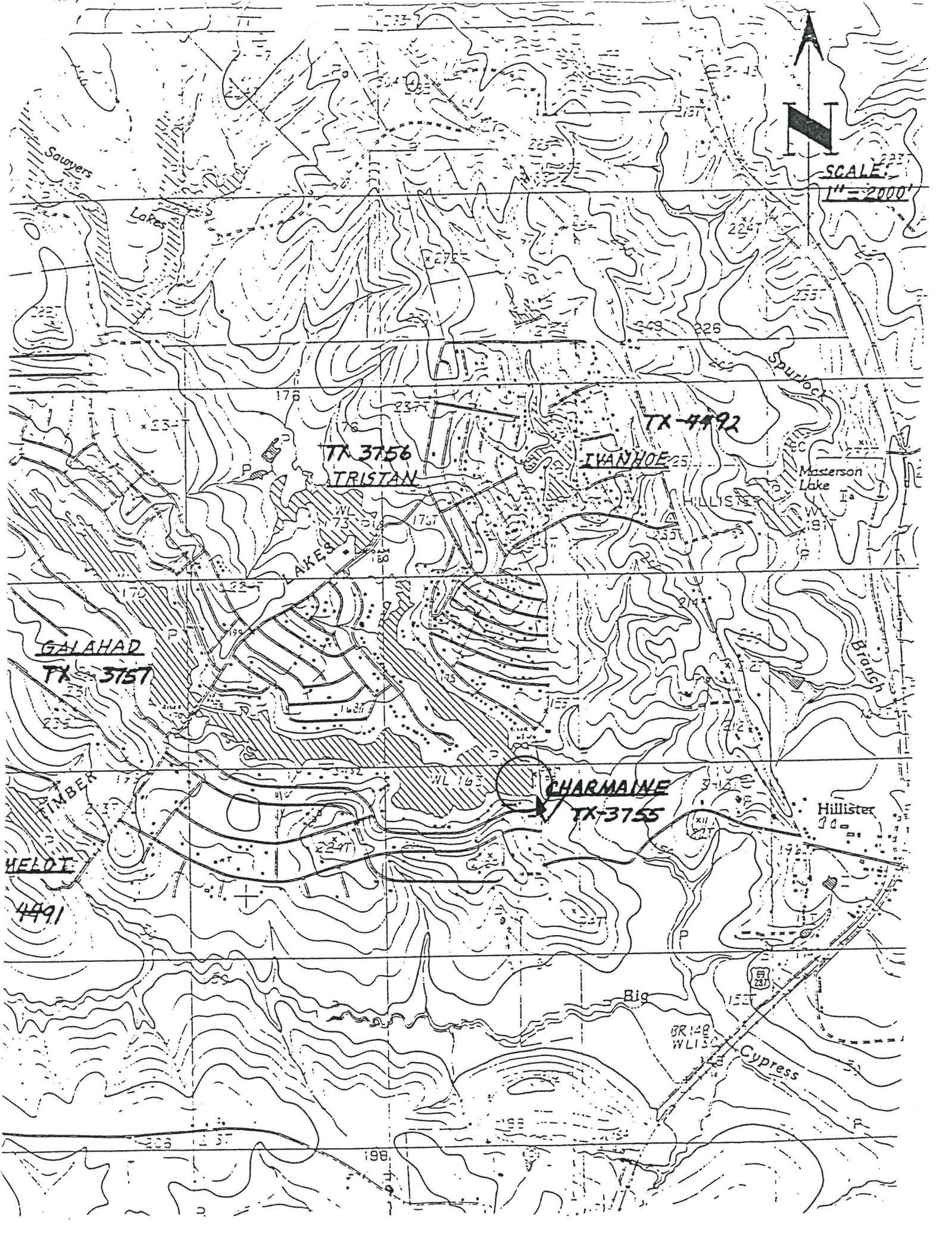


LAKE CHARMAINE DAM
TX- 3755

I POIA
JANUARY 28, 1998



SCALE
1" = 2000'



TX 3756
TRISTAN

TX 4492
IVANHOE

GALAHAD
TX 3757

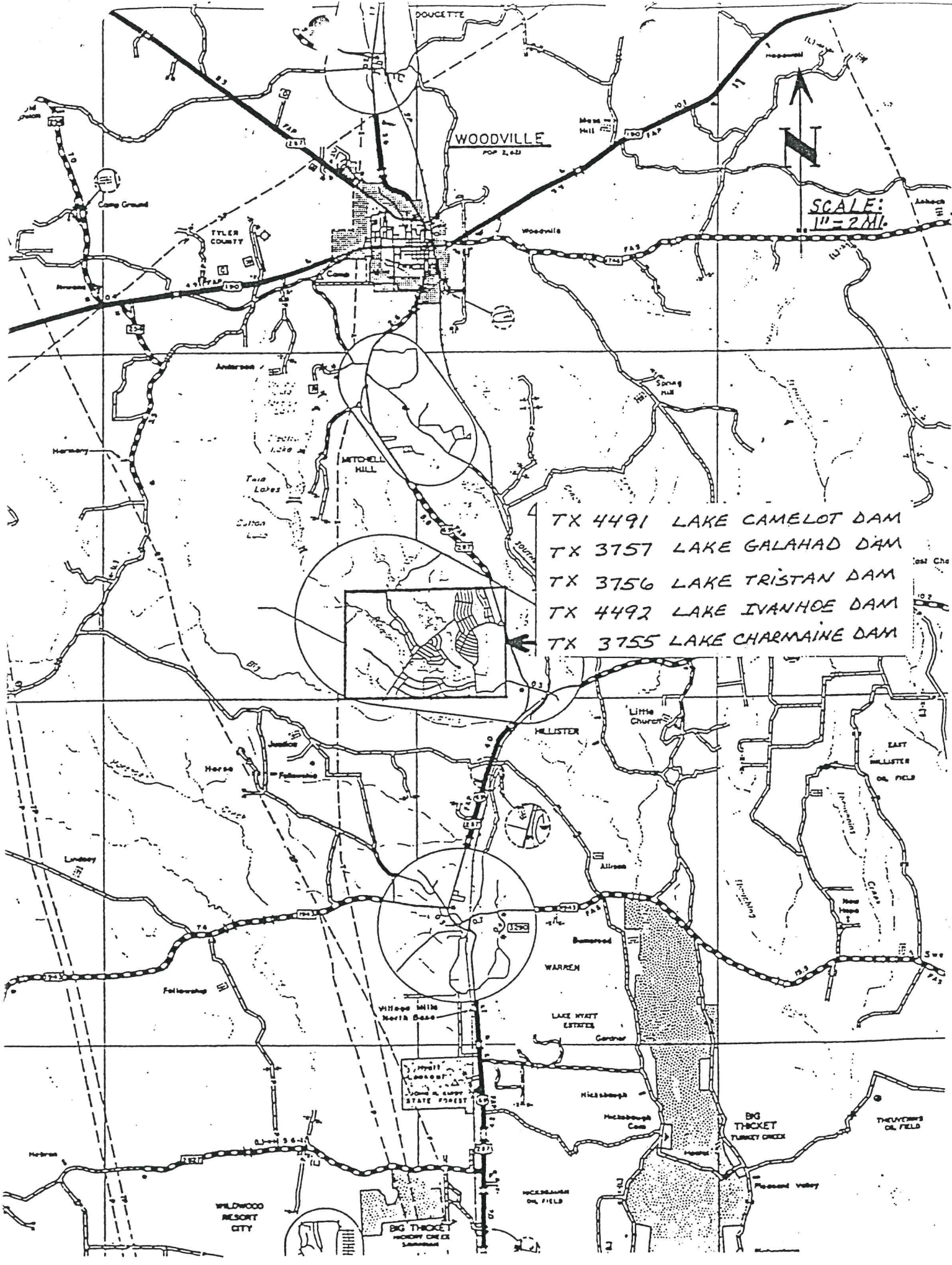
CHARMAINE
TX 3755

HELDT
4491

Hillister

BR 128
WL 130

Cypress



WOODVILLE
POP 2,421

SCALE:
1"=2 MI.

- TX 4491 LAKE CAMELOT DAM
- TX 3757 LAKE GALAHAD DAM
- TX 3756 LAKE TRISTAN DAM
- TX 4492 LAKE IVANHOE DAM
- TX 3755 LAKE CHARMAINE DAM

WILWOOD
RESORT
CITY

STATE FOREST

BIG THicket
TURKEY CREEK